

Serial No.: 10/524,301

Confirmation No.: 6371

Filed: October 11, 2005

For: PREPARATIONS BASED ON AZIRIDINO POLYETHERS AND THE USE THEREOF

Remarks

The Office Action mailed January 26, 2009 has been received and reviewed. Claims 15, 21, 25, 28, and 29 having been amended, and no claims having been canceled or added herein, the pending claims are claims 15-29.

Claims 15, 21, 25, 28, and 29 have been amended to clarify that the compound having one (1) aziridino group has one and *only* one (1) aziridino group, which is broadly supported by the present specification.

Reconsideration and withdrawal of the rejections are respectfully requested.

Double Patenting Rejection under 35 U.S.C. §101

On page 5 of the Office Action mailed January 26, 2009, the Examiner provided paragraphs related to a statutory type (35 U.S.C. §101) double patenting rejection.

"Before consideration can be given to the issue of double patenting, *two or more patents or applications* must have at least one common inventor and/or be either commonly assigned/owned or non-commonly assigned/owned but subject to a joint research agreement as set forth in 35 U.S.C. 103(c)(2) and (3) pursuant to the CREATE Act (Pub. L. 108-453, 118 Stat. 3596 (2004))" (M.P.E.P. §804; emphasis added).

However, the Examiner has not indicated that any claims in the present application have been rejected over the claims of any other patents or applications. Thus, the intent of reciting the paragraphs related to double patenting rejections is not understood. In the event that the present rejection is maintained in the next Official Communication, appropriate clarification is respectfully requested.

Provisional Objection to the Claims under 37 C.F.R. §1.75

The Examiner advised that should claim 15 be found allowable, claim 28 would be objected to under 37 C.F.R. §1.75 as being a substantial duplicate thereof. Applicants respectfully traverse the provisional objection.

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"[W]hen two claims in an application are duplicates, or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other claim under 37 CFR 1.75 as being a substantial duplicate of the allowed claim" (M.P.E.P. §706.03(k)). Applicants respectfully submit that claims 15 and 28 do not cover the same thing, and thus, are not substantial duplicates.

For example, both claims 15 and 28 (as amended) recite, among other things, that component Z2 includes at least one compound having only one (1) aziridino group. However, while claim 15 (as amended) recites that *at least one compound according to component Z2* differs, in its chemical make-up, from at least one compound according to component Z1, claim 28 (as amended) recites that the differing compound of component Z2 is specifically *the at least one compound having only one aziridino group*.

For at least this reason, Applicants respectfully submit that claims 15 and 28 do not cover the same thing, and thus, are not substantial duplicates.

The Examiner also advised that should claim 21 be found allowable, claim 29 would be objected to under 37 C.F.R. §1.75 as being a substantial duplicate thereof. Applicants respectfully traverse the provisional objection.

"[W]hen two claims in an application are duplicates, or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other claim under 37 CFR 1.75 as being a substantial duplicate of the allowed claim" (M.P.E.P. §706.03(k)). Applicants respectfully submit that claims 21 and 29 do not cover the same thing, and thus, are not substantial duplicates.

For example, both claims 21 and 29 (as amended) recite, among other things, that component Z2 includes at least one compound having only one (1) aziridino group. However, while claim 21 (as amended) recites that *at least one compound according to component Z2* differs, in its chemical make-up, from at least one compound according to component Z1, claim 29 (as amended) recites that the differing compound of component Z2 is specifically *the at least one compound having only one aziridino group*.

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For at least this reason, Applicants respectfully submit that claims 21 and 29 (as amended) do not cover the same thing, and thus, are not substantial duplicates.

Reconsideration and withdrawal of the provisional objections to the claims are respectfully requested.

Further, Applicants note that claims 28 and 29 are not subject to any rejections or additional objections in the Office Action mailed January 26, 2009. Thus, upon withdrawal of the provisional objection, claims 28 and 29 (as amended) should be in condition for allowance. Notification of the allowance of claims 28 and 29 is respectfully requested in the next Official Communication.

Rejection under 35 U.S.C. §102

The Examiner rejected claims 15-27 under 35 U.S.C. §102(b) as being anticipated by Zech et al. (WO 01/17483; hereinafter Zech et al. '483), with U.S. Patent No. 6,894,144 (Zech et al. '144) being used as the English language translation of Zech et al. for examination purposes.

"[F]or anticipation under 35 U.S.C. 102, the reference must teach *every aspect* of the claimed invention either explicitly or impliedly." M.P.E.P. §706.02(V) (emphasis added). A claim is not anticipated by "a single prior art reference which discloses a genus encompassing the claimed species or subgenus but does not expressly disclose the particular claimed species or subgenus" (M.P.E.P. §§ 2144.08(I) and 2131.02). Applicants respectfully submit that Zech et al. fail to teach *every aspect* of the presently claimed invention.

As noted by the Examiner, Zech et al. recite the following:

As constituent (D) of the base component, mixtures of N-alkylaziridine compounds are used, the aziridino equivalent masses being able to be varied from 500 to 25000 g/equivalent and the number of N-alkylaziridino groups being able to be varied between 1 and 4 per molecule.

Preferably mixtures of N-alkylaziridine polyethers are used which consist of at least up to 60% of polyether compounds which carry at least two aziridino groups. According to another preferred version of the invention, mixtures of N-alkylaziridino polyethers

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are used which consist of at least up to 5% of polyether compounds which contain at least 3 aziridino groups.

(Column 6, lines 53-64 of U.S. Patent No. 6,894,144.)

Thus, Zech et al. clearly disclose N-alkylaziridino compounds in which the number of N-alkylaziridino groups can be varied between 1 and 4 per molecule, and the broad *genus* of mixtures of N-alkylaziridino polyethers. Zech et al. further disclose a *subgenus* of mixtures of bisaziridino polyethers (i.e., having on average 2 aziridino groups). For example, Zech et al. disclose composition BM-B2 (e.g., Table 8 at column 12) that includes two mixtures of bisaziridino polyethers, wherein the two mixtures apparently differ at least in number average molecular weight, weight average molecular weight, and composition of the polymer backbone. However, Zech et al. fail to explicitly disclose the *subgenus* of mixtures of aziridino compounds including *Z1 (including at least one compound having on average 2 aziridino groups or more)* and *Z2 (including at least one compound having only 1 aziridino group)*, as recited in the present claims (as amended). For at least the reason that Zech et al. fail to explicitly disclose the above-discussed *subgenus* of mixtures of aziridino compounds, Applicants respectfully submit that claims 15-27 (as amended) are not anticipated by Zech et al.

Applicants note that in response to arguments similar to those presented herein above, the Examiner stated that "component Z2 comprising a compound having 1 aziridino group does not limit the compound to only 1 aziridino group" (page 6, last paragraph of the Office Action mailed January 26, 2009). Applicants disagree. However, in an effort to expedite prosecution of the present application, claims 15, 21, 25, 28, and 29 have been amended to make it abundantly clear that the compound having one (1) aziridino group has one and *only* one (1) aziridino group. Reconsideration and withdrawal of the rejection under 35 U.S.C. §102(b) are respectfully requested.

Furthermore, Applicants respectfully submit that claims 15-27 (as amended) are not suggested by Zech et al. for at least the following reasons.

The present application relates to dental impression materials useful for taking an impression of the situation in a patient's oral cavity. Often, taking such an impression can be

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inconvenient for the patient. Thus, it is desirable that the time for taking the impression be as short as possible, without prematurely removing the impression material from the patient's mouth. Premature removal of the impression material can result in a loss of precision and detail if, for example, the impression material has not sufficiently cured.

In an effort to reduce the time for taking the impression, attempts have been made to accelerate the cure of the impression material. For example, impression materials with increased amounts of catalyst have been prepared. However, the cured impression material often exhibits inadequate elastomeric properties to allow for convenient use by the practitioner. As a result, further efforts using increased plasticizer levels have been pursued in attempts to improve the elastomeric properties of the cured impression material. However, increased amounts of plasticizers can result in decreased storage stability due to migration of the plasticizer to the surface of the impression material.

The present invention provides compositions that include **Z1 (including at least one compound having on average 2 aziridino groups or more)** and **Z2 (including at least one compound having only 1 aziridino group)**. The compositions described in the present claims can provide impression materials with faster cure times, without the inferior elastomeric properties and reduced storage stabilities often seen with other attempted solutions. The compositions according the present invention can provide the practitioner with a material that reduces the amount of time the uncured impression material spends in the patient's mouth, while still giving the practitioner enough time to achieve a very high precision in the impression. Thus, the present invention can provide an acceleration of the curing process, preferably without detrimentally impacting the material properties of the cured impression material, which has not been suggested in the cited art. Applicants respectfully submit that Zech et al. fail to provide any suggestion for one of skill in the art to purposefully select the combination including **Z1 (including at least one compound having on average 2 aziridino groups or more)** and **Z2 (including at least one compound having only 1 aziridino group)**, as recited in the present claims. Thus, the compositions according to the present invention have a required content of monofunctional aziridino compounds, a suggestion of which is lacking from Zech et al.

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Specifically, Zech et al. disclose the use of 5 to 100 weight-% of a mixture of N-alkylaziridino compounds with aziridino equivalent masses of 500 to 25,000 g/equivalent as a base component (column 6, lines 53-56). Zech et al. further disclose that mixtures of N-alkylaziridino compounds can have between one and four N-alkylaziridino groups per molecule (column 6, lines 56-57). However, Zech et al. give no further suggestions as to the possible constituents of such a mixture.

It should be noted that Zech et al. even cite mixtures of polyethers as being preferred which consist of up to 60% of polyether compounds which carry at least two aziridino groups. It is further preferred if at least 5% of polyether compounds contain at least three aziridino groups. Thus, with regard to the amount of difunctional and trifunctional N-alkylaziridino polyethers Zech et al. contain an explicit disclosure. However, Zech et al. lack a similar disclosure with respect to monofunctional aziridino compounds.

As can be clearly taken from the present application, the addition of monofunctional compounds according to the present invention can result in an increase of curing speed in the early phase of curing, resulting in an improved hardness after a conventional time of about 6 minutes before taking the impression material out of the patient's mouth. The increase in curing speed can lead to either an improved impression characteristic when leaving the impression material in the patient's mouth for the usual time, or can allow for an early removal of the impression material without sacrificing precision, compared to materials known in the art. None of these advantages are taught by Zech et al. Further, Applicants have been unable to locate in any of the other documents cited by the Examiner, any mention of an improved acceleration phase resulting in the advantages discussed herein above.

For at least these reasons, Applicants respectfully submit that claims 15-27 (as amended) are neither taught nor suggested by Zech et al. Reconsideration and withdrawal of the rejection of claims 15-27 under 35 U.S.C. §102(b) are respectfully requested.

Summary

It is respectfully submitted that all the pending claims are in condition for allowance and notification to that effect is respectfully requested. The Examiner is invited to contact Applicants' Representatives at the telephone number listed below if it is believed that prosecution of this application may be assisted thereby.

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CERTIFICATE UNDER 37 CFR §1.8:

The undersigned hereby certifies that this paper is being transmitted via the U.S. Patent and Trademark Office electronic filing system in accordance with 37 CFR §1.6(a)(4) to the Patent and Trademark Office addressed to the Commissioner for Patents, Mail Stop AF, P.O. Box 1450, Alexandria, VA 22313-1450, on this 17th day of March, 2009.

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